Implementation science capacity strengthening – Impact and added value of GACD activities

Summary

Globally, non-communicable diseases (NCDs) lead to 41 million deaths per year (around 71% of all deaths), with 78% of these (32 million) occurring in low- and middle-income countries (LMICs).[1] While many effective interventions against NCDs exist, there are inequalities in coverage and outcomes, which are more likely due to a lack of appropriate implementation than a failure of the intervention.[2] Hence, implementation science can play an important role in informing policy and practice towards addressing the global NCD burden. In this context, capacity strengthening of local researchers is also important, because implementation research conducted locally within the context in which the intervention is to be implemented is most likely to generate the most relevant evidence for policy and practice.

GACD delivers capacity through three main routes:

- Implementation Science Training School, conducted over 5 or more days
- Implementation Science Workshops, conducted over 2 days
- Implementation Science e-hub, a free online learning space for knowledge and skill development in implementation research, particularly in relation to chronic diseases and NCDs

These activities have led to **many researchers being introduced to implementation science** and associated research methods. Moreover, **researchers have expanded their professional networks, built new collaborations, submitted new proposals and furthered their careers** on the back of knowhow and skills gained through their training.

Opportunities for similar training are not widespread or accessible (– in terms of cost). Hence, the GACD has a crucial role to play in building capacity for implementation science, particularly in relation to NCD research and LMIC contexts.

Background

Implementation science is commonly defined as "the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services and care".[3,4] It examines what works, for whom and under what circumstances, and how interventions can be adapted and scaled up in ways that are accessible and equitable. Thus, implementation science can provide the evidence necessary to improve effective delivery of interventions and support evidence-based policymaking for building programmes to enhance public health.

Globally, NCDs lead to 41 million deaths per year (around 71% of all deaths), with 78% of these (32 million) occurring in LMICs.[1] While many effective interventions against NCDs exist, there are inequalities in coverage and outcomes, which are more likely due to a lack of appropriate implementation than a failure of the

[1] WHO. Fact sheet: Non-communicable diseases. 2018.

[2] WHO. Assessing national capacity for the prevention and control of noncommunicable diseases: Report of the global survey 2019. 2020.

[3] https://www.gacd.org/research/implementation-science

[4] Eccles MP, Mittman BS. Welcome to implementation science. Implement Sci. 2006;1(1).

intervention.[5] Hence, implementation science has an important role in informing policy and practice towards addressing the global NCD burden.

However, implementation research conducted locally within the context in which the intervention is to be implemented is most likely to generate the most relevant evidence for policy and practice. Local researchers who are fully embedded in the local context are best placed to conduct this type of research.[6,7,8] This concept of 'local' includes researchers in poorly resourced countries like LMICs where there is an unmet need for implementation research and associated capacity. Capacity strengthening of LMIC researchers in particular hence plays an important role in building a critical mass of researchers with the appropriate skills to conduct implementation research and engage with local stakeholders (policy makers, practitioners and community) to translate the research findings into policy and/or practice in order to benefit the health of the most vulnerable populations across the world.

Capacity building activities

GACD has a mandate to deliver capacity building activities alongside research projects. This is accomplished through 3 main routes:

- Implementation Science Training School, conducted over 5 or more days
- Implementation Science Workshops, conducted over 2 days
- Implementation Science e-hub, a free, comprehensive online learning space for knowledge and skill development in implementation research, particularly in relation to chronic and non-communicable diseases

The Implementation Science Training School has been held annually since 2018, with the 2020 school held virtually owing to the COVID-19 pandemic. The Training School is facilitated by prominent global experts in the field frequently drawn from amongst the GACD network itself and provides training to early- and mid-career researchers with an interest in chronic NCDs in implementation science. It not only covers relevant theoretical models, research designs, and methods, but also teaches about studying and implementing research findings in policy and practice, and collaborating and networking globally.[9] The Training School is offered at no cost to participants; however, there is a selection process, with potential participants assessed on their potential, commitment to the field, support available (e.g. research, institutional, mentoring support), and project proposal. Participants need to have completed or be undertaking postgraduate studies in health sciences, public health, or similar; recently completed a PhD in a field relevant to implementation science; or be graduates with up to 5 years of relevant experience. Preference is given to individuals associated with GACD projects or conducting research on NCDs, and LMIC researchers or researchers conducting research in LMICs or with vulnerable indigenous populations.[9]

[5] WHO. Assessing national capacity for the prevention and control of noncommunicable diseases: Report of the global survey 2019. 2020.

[6] Haregu TN, Byrnes A, Singh K, Sathish T, Pasricha N, Wickramasinghe K, et al. A scoping review of non-communicable disease research capacity strengthening initiatives in low and middle-income countries. Glob Heal Res Policy. 2019;4(1).

[7] Franzen SRP, Chandler C, Lang T. Health research capacity development in low and middle income countries: Reality or rhetoric? A systematic meta-narrative review of the qualitative literature. BMJ Open. 2017;7(1).

[8] Dean L, Gregorius S, Bates I, Pulford J. Advancing the science of health research capacity strengthening in low-income and middle-income countries: A scoping review of the published literature, 2000-2016. BMJ Open. 2017;7(12).

[9] https://www.gacd.org/research/implementation-science-capacity-building/2020-gacd-implementation-science-training-school-virtual

The Implementation Science Workshops were originally held once a year along with the GACD Annual Scientific Meeting.[10] In response to increasing demand, these are now held more frequently at locations around the world. The workshops are usually supported by the GACD funding agency co-hosting the Annual Scientific Meeting and the relevant funder's networks are used to identify potential participants. This model allows participants to gain a deeper understanding of the host country's health care and research context. The GACD Implementation Workshops have been facilitated since 2014 by Professor Brian Oldenburg, University of Melbourne School of Population and Global Health.[10]

The new Implementation Science e-Hub launched in March 2021 provides free resources and learning materials including self-directed training programmes, evidence summaries, interactive learning tools and a specially curated index of international resources.[11] It is aimed at a broad audience including researchers, practitioners, and policy makers at any stage of their careers, whether they are completely new to implementation science or just want to brush up their skills. Individuals can learn, share experiences and self-manage their training and career development, accessing international lectures and relevant case studies.[11]

Outcomes and impact

The number of workshop participants has grown from 25 participants at the first event in Xi'an, China in 2014, to over 60 participants in the last two years.[10] The number of Training School participants have ranged from approximately 62 participants (22 from Brazil, 40 from other countries) in Brazil in 2018 to about 45 in the 2020 virtual school.[12]

These activities have helped to build and strengthen implementation science capacity, especially in disadvantaged or resource-poor countries, helping to train and increase understanding in this area. The Training School in particular is rated very highly by participants and trainers, with one trainer stating that the school was "*the most amazing, outstanding kind of organised course that I've ever seen*". The course content and secretariat and training faculty's efforts in delivering the training are also greatly appreciated by individuals interviewed for the evaluation of GACD.

Several stakeholders interviewed for the GACD evaluation felt that **GACD has played a major role in increasing the awareness of implementation science globally**. Some researchers credited the Implementation Science School with introducing them to implementation science, and further opening up opportunities to take up new research topics and to collaborate internationally. One researcher explained how he and likeminded co-participants in the Implementation Science School reviewed national guidelines from different countries and published a joint paper.

In a survey of 13 non-GACD network trainees,[13] nine respondents (69%) indicated that **GACD training activities had allowed them to establish connections with other researchers, enabling them to expand their professional networks, publish joint papers, and exchange information and advice regularly**. About a third (31%, 4 of 13) of respondents became involved in a new project and about a quarter (23%, 3 of 13) submitted a proposal owing to their participation in the training schools and workshops and the knowhow gained – with two individuals reporting that the skills gained helped them in their PhD research. The GACD Training Schools and Workshops have also influenced how participants design and implement their research afterwards, with participants predominantly using their new training in NCD-related research (88%, 21 of 24 GACD network trainees; 69%, 9 of 13 non-GACD network trainees). Some respondents (13%, 21 of 24 GACD network

[10] https://www.gacd.org/research/implementation-science-capacity-building

[11] https://www.gacd.org/research/implementation-science-capacity-building/implementation-science-e-hub

[12] https://www.gacd.org/research/implementation-science-capacity-building/2020-gacd-implementation-science-training-school-virtual; https://www.gacd.org/research/implementation-science-capacity-building/2018-gacd-implementation-science-training-school-campinas-brazil

[13] Surveys of GACD network members and non-GACD network trainees conducted by Technopolis as part of the evaluation of the GACD

trainees; 23%, 3 of 13 non-GACD network trainees) also stated that the training influenced their work in areas other than NCDs and implementation science.

Participants' comments on the value of the workshops and the training school:

"*This workshop has broadened my way of thinking about research and how to implement in the real-world setting*."

"*Helped to provide foundational training and knowledge for my research work*"

"*After my participation, I improved the project we were working on based on my learning at the school and started the implementation of the project on the ground*."

"*The skills, and knowledge base of implementation science has increased due to my participation in the Implementation Science Training School, and this has helped me to provide technical support to implementation science projects on preventing violence and child abuse in many countries*."

"*[It helped me understand] how to execute 'things' in the context of programmes as a district programme manager*."

Value of GACD capacity building activities

Few other (freely accessible) training opportunities exist outside of the GACD.[14] Hence, the **GACD has a crucial role to play in building capacity for implementation science, particularly in relation to research on NCDs and in LMIC contexts**. Most respondents (77%, 10 of 13) continued to be active in implementation research.[13] One person mentioned that they had been promoted to a role where implementation science is a core element.

In enabling a much greater global reach, one funder highlighted that the new e-Hub is already acknowledged as a great resource for training and presents tremendous 'value for money'.

> Dr Catherine Kyobutungi, Executive Director of the African Population and Health Research Center (APHRC), Kenya, and faculty for the Implementation Science School in 2020 commented: "*That [capacity building] is part of the problem in the ecosystem. If you have people who don't understand implementation science, they'll never be competitive when it comes to grant applications. So the fact that they [GACD] are going out of their way to train upcoming researchers in different parts of the world in implementation science - I was like, wow, this is really great*".

[14] Based on surveys of GACD network members and non-GACD network trainees as well as feedback from researchers, funders and independent experts interviewed as part of the evaluation of the GACD